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(54) **COMPRESSION IGNITION TYPE INTERNAL COMBUSTION ENGINE**

(57) Abstract:

**PROBLEM TO BE SOLVED:** To increase combustion efficiency and decrease fuel consumption and emission by adding auxiliary energy to air-fuel mixture in a state of high consumption improvement effect, while avoiding knocking phenomenon.

**SOLUTION:** This internal combustion engine directs auxiliary energy supply control part 34, via load judgment part 31, to supply air-fuel mixture with auxiliary energy, when engine load detected by load sensor is not more than specified value. At this time, pressure control part 32 controls supercharger 13, temperature control part 33 controls intake air heater 14, so as to keep pressure inside cylinder near compression top dead center around 4 MPa and temperature inside cylinder around 730 K.

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